

Application No.: 10/660,054  
Amendment Dated: August 6, 2009  
Reply to Office Action of: June 2, 2009

MAT-8260US1

**Amendments to the Drawings:**

The attached replacement sheets of drawings include changes to Figures 5-7. These sheets replace the original sheets. New Figures 5-7 now include the designation "Prior Art."

**Remarks/Arguments:**

**Status of the Claims**

Claims 40, 76, 85, 99-100 and 102-103 are amended herein. Claims 1-36, 38-39, 41-58, 60-75, 77-83, and 88-95 have been cancelled. As a result, claims 37, 40, 59, 76, 84-87, and 96-105 remain pending and under examination in the above-identified application. No claim has been allowed.

**Priority**

The Examiner has noted that Applicants have not filed a certified copy of the priority Japanese application as required by 35 U.S.C. §119(b). However, the present application is a division of U.S. Ser. No. 10/149,667, which indicates that the priority documents were filed at the International Phase (see enclosure). An acknowledgement in the present application is requested.

**Drawings**

In accordance with the Examiner's suggestion, Figures 5-7 have been revised to include the designation "Prior Art".

**Claim Rejections under 35 U.S.C. §112**

Applicants traverse the rejection of claims 40, 76, 85, 99-100 and 102-103 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Reconsideration and withdrawal of the rejection are respectfully requested in view of the claim amendments and the following remarks.

The Examiner has noted that in claims 40 and 85 it is "unclear whether the recited densities are the overall average density for the inner layer and the two surface layers." Applicants have herein amended each of these claims to recite: "wherein the surface layers of the fiber sheet each have a density ranging from 700 kg/m<sup>3</sup> to 1000 kg/m<sup>3</sup>." Support for this amendment is provided at page 9, lines 25-27, of the specification as originally filed; no new matter has been introduced.

The Examiner has also noted that in claim 76 "it is vague and indefinite as to what material(s) are 'first and second layers' referring to." Applicants have herein amended claim 76 to delete the reference to "first and second layers disposed at respective outermost sides of the fiber sheet," as this language is believed to be redundant to the recitation elsewhere in the claim of "an inside layer having two faces and two surface layers, one which surface layers is disposed on each face of the inside layer."

Additionally, the Examiner has commented that in claims 99-100 and 102-103, " $700 \text{ kg/m}^3$  could be the density for *both* inner layer and the surface layers." Applicants respectfully disagree with this interpretation, as these claims all depend from independent claim 37 or independent claim 76 and thus include all the limitations of the claims from which they depend. Independent claims 37 and 76 both require that "the density of the non-woven fabric in the inside layer is lower than the density of the non-woven fabric in each of the surface layers." However, in the interest of advancing prosecution of the present application, Applicants have amended claims 99-100 and 102-103 herein to directly recite this limitation in the dependent claims as well.

### **Claim Rejections under 35 U.S.C. §§102 and 103**

Applicants traverse the rejection of claims 37, 40, 59, 76, 84-87 and 96-105 under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Nakatani (U.S. Pat. No. 5,888,627) or Haas et al. (U.S. Pat. No. 6,245,696). Reconsideration and withdrawal of the rejections are respectfully requested in view of the claim amendments and the following remarks.

Neither of these references discloses a structure as recited in Applicants' pending claims which contains a fiber sheet comprising an inside layer and two surface layers, wherein the density of the non-woven fabric in the inside layer is lower than the density of the non-woven fabric in each surface layer. The pending claims thus are clearly novel over the disclosures of both the Nakatani and Haas et al. references. Further, a person of ordinary skill in the art would not have found it obvious to modify the reference structures to arrive at the particular structure being claimed in the present application. The teaching in the Haas reference that "at least one" non-woven

reinforcing material could be present in the core would not lead an ordinarily skilled person to select and use a fiber sheet having an inner layer density less than the densities of the surface layers on either side of that inner layer. The Nakatani reference does not even suggest the possibility of using non-woven materials of different or variable densities.

Applicants have unexpectedly found that using a fiber sheet having the variable density construction set forth in the pending claims provides certain advantages when manufacturing a core board to be used in a clad board for forming circuitry. These surprising benefits are explained at page 10, line 7, through page 11, line 6, of the specification. A worker of ordinary skill would not have had any reason to believe, based on the disclosures of the Nakatani and Haas et al. references (alone or in combination) and/or his or own background knowledge, that such improvements in performance could be attained through the utilization of a fiber sheet comprising:

an inside layer having two faces and two surface layers, one of which surface layers is disposed on each face of the inside layer;

wherein the density of the non-woven fabric in the inside layer is lower than the density of the non-woven fabric in each of the surface layers; and

wherein the inside layer and the surface layers are made of materials identical to each other.

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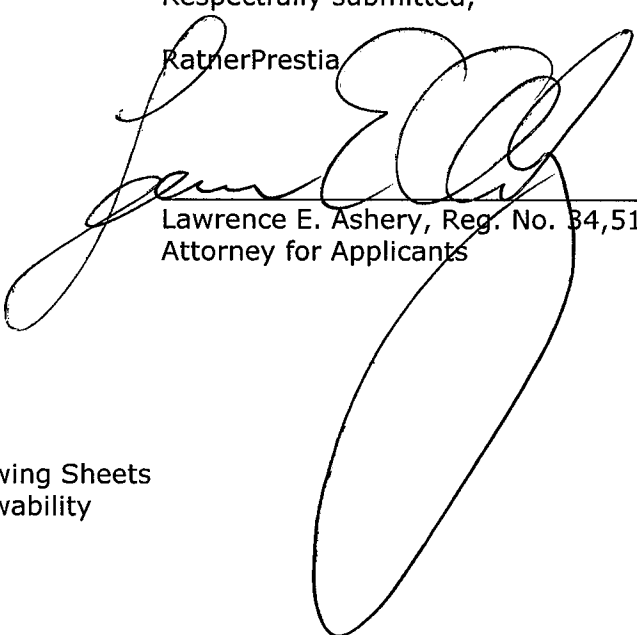
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### Conclusion

In view of the amendments and arguments set forth above, the above-identified application is in condition for allowance, which action is respectfully requested. If any issues remain, the Examiner is invited to contact Applicants' Attorney at the number listed below.

Respectfully submitted,

Rather Prestia

  
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Attorney for Applicants

LEA/dmw

Dated: August 6, 2009

Attachments:

3 Replacement Drawing Sheets  
Copy/Notice of Allowability

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S0456776

# Notice of Allowability

Application No.

10/149,667

Examiner

Merrick Dixon

Applicant(s)

YAMANE ET AL.

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amdt. after final, filed 7-9-04.
2. ☒ The allowed claim(s) is/are 1-5, 17, 24, <sup>30</sup>81-84, renumbered 1-12.
3. ☒ The drawings filed on 09 October 2002 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_
    3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (-as "replacement sheets") must be submitted:
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 1-29-04; 2-19-02; 6-13-02
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
MERRICK DIXON  
PRIMARY EXAMINER